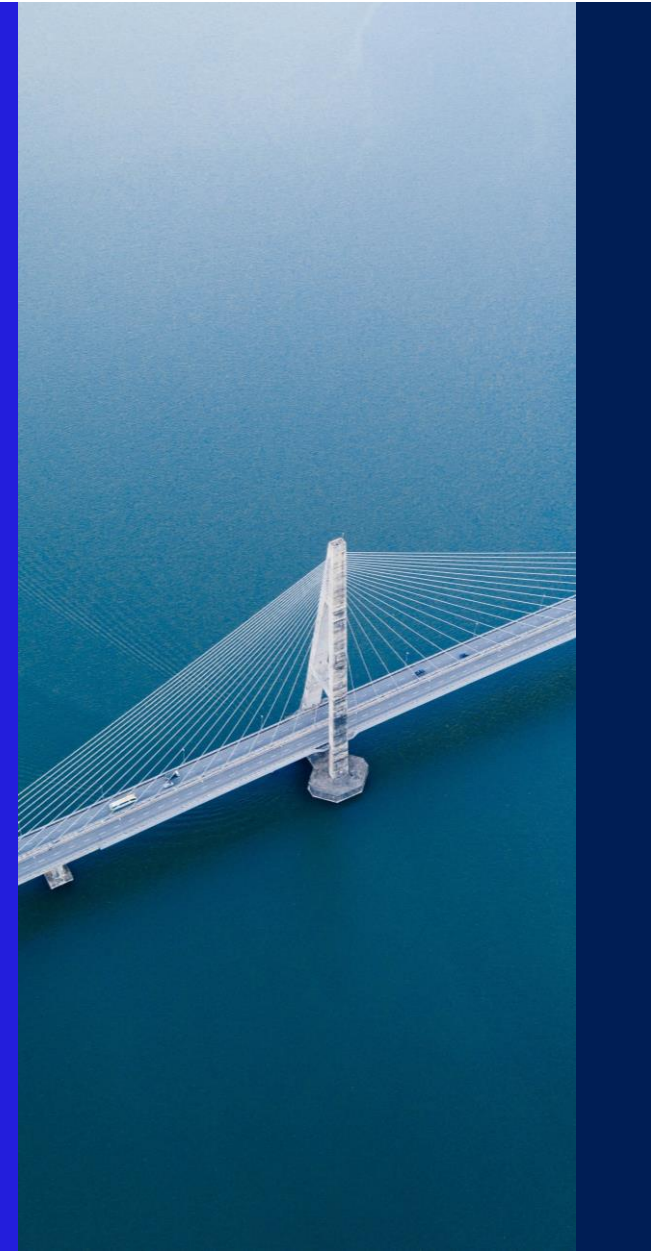


In the kNOW Webinar

Adapting Smart Water Metering
Implementation During COVID-19

June 25, 2020



Agenda

- Introduction to Jacobs & the City of Columbia
- Smart Metering Methodology
- Success of the Columbia Project
- Why AMI Now?



Introduction to Jacobs and the City of Columbia

Introductions

Jason Shaw

Presenter



AMI Project Manager for
the City of Columbia

Josh Braman

Presenter



Jacobs Project Manager
for Columbia's AMI
Program and Global SME
for Smart Metering
Implementation at Jacobs

Jaason Englesmith

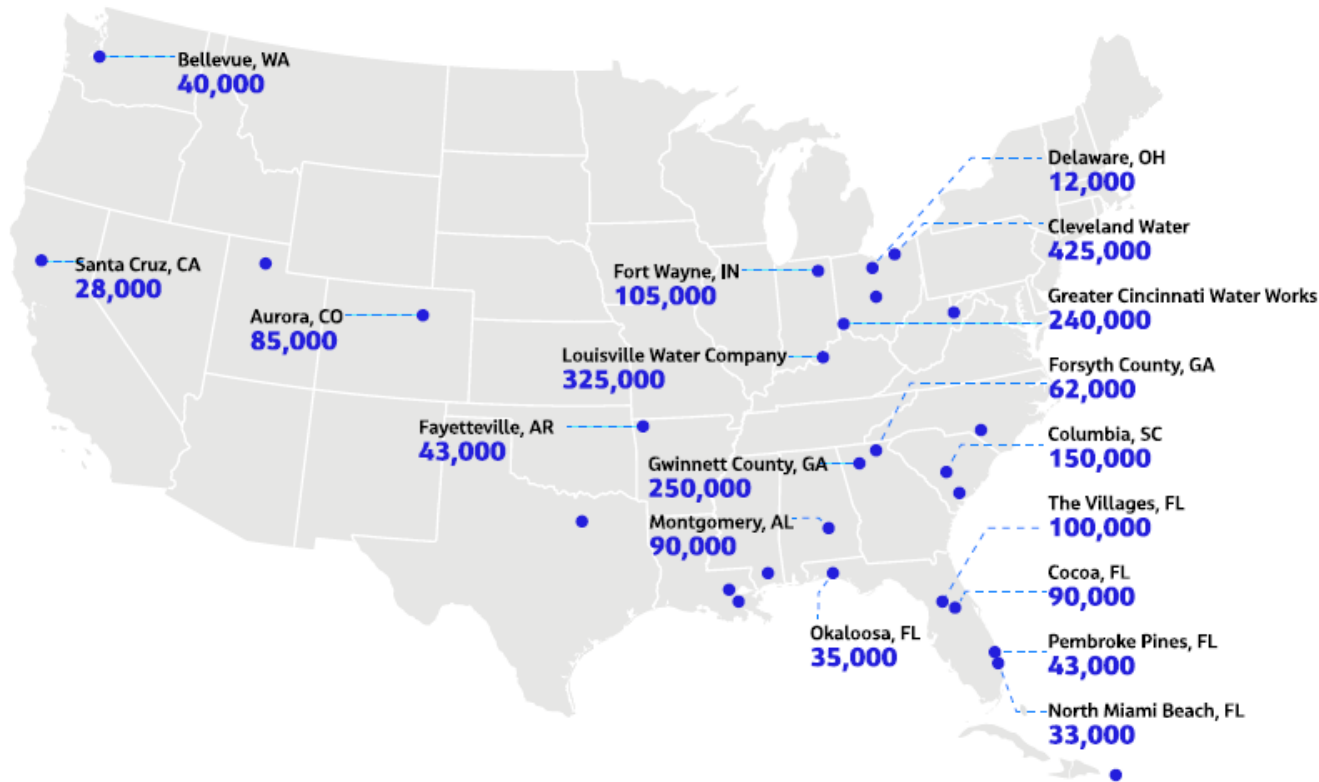
Moderator



Jacobs Project Director
for Columbia's AMI
Program and Global
Technology Leader for
Smart Metering at Jacobs

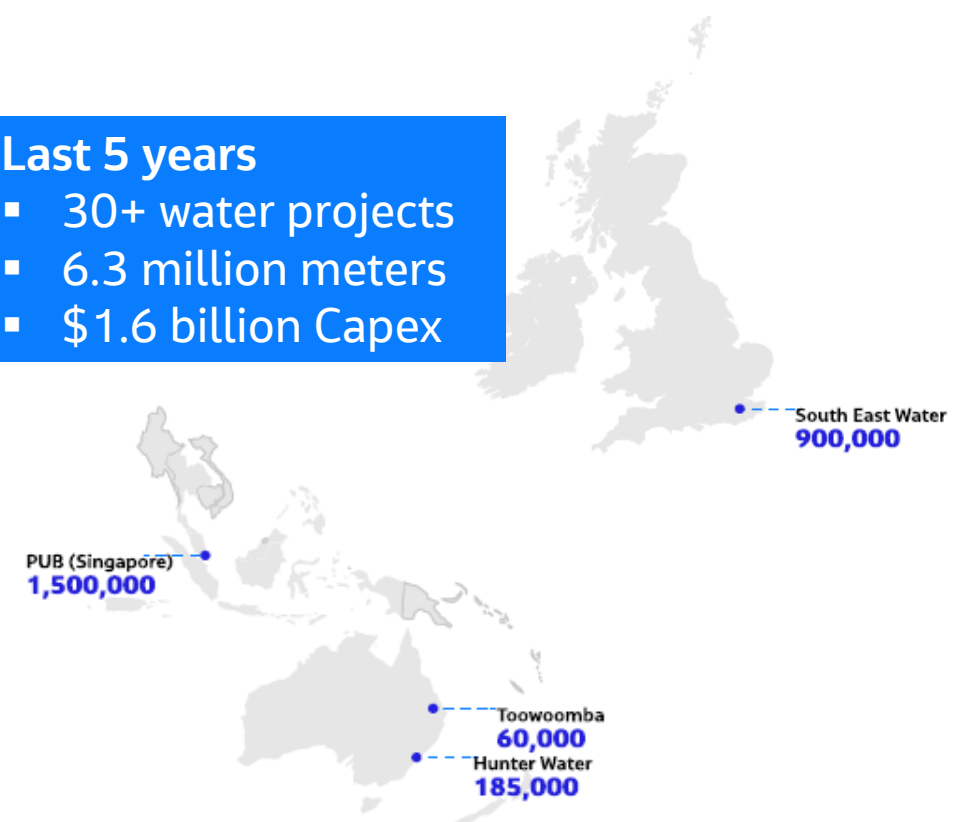
Global experience and focus on water provides lessons learned

- Focus exclusively on water utilities as the owner's agent
- Strictly vendor independent



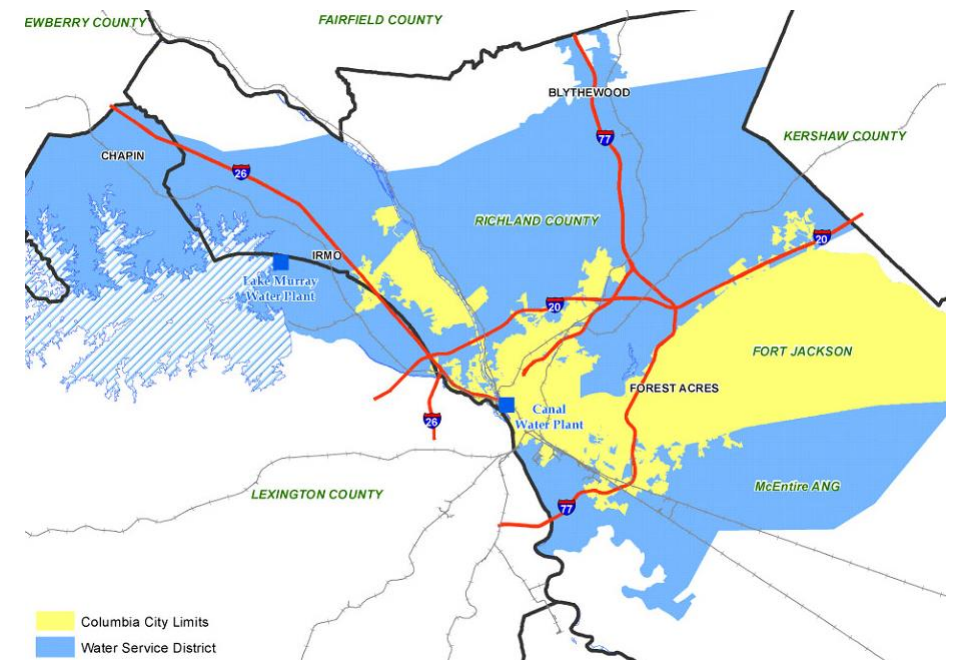
Last 5 years

- 30+ water projects
- 6.3 million meters
- \$1.6 billion Capex



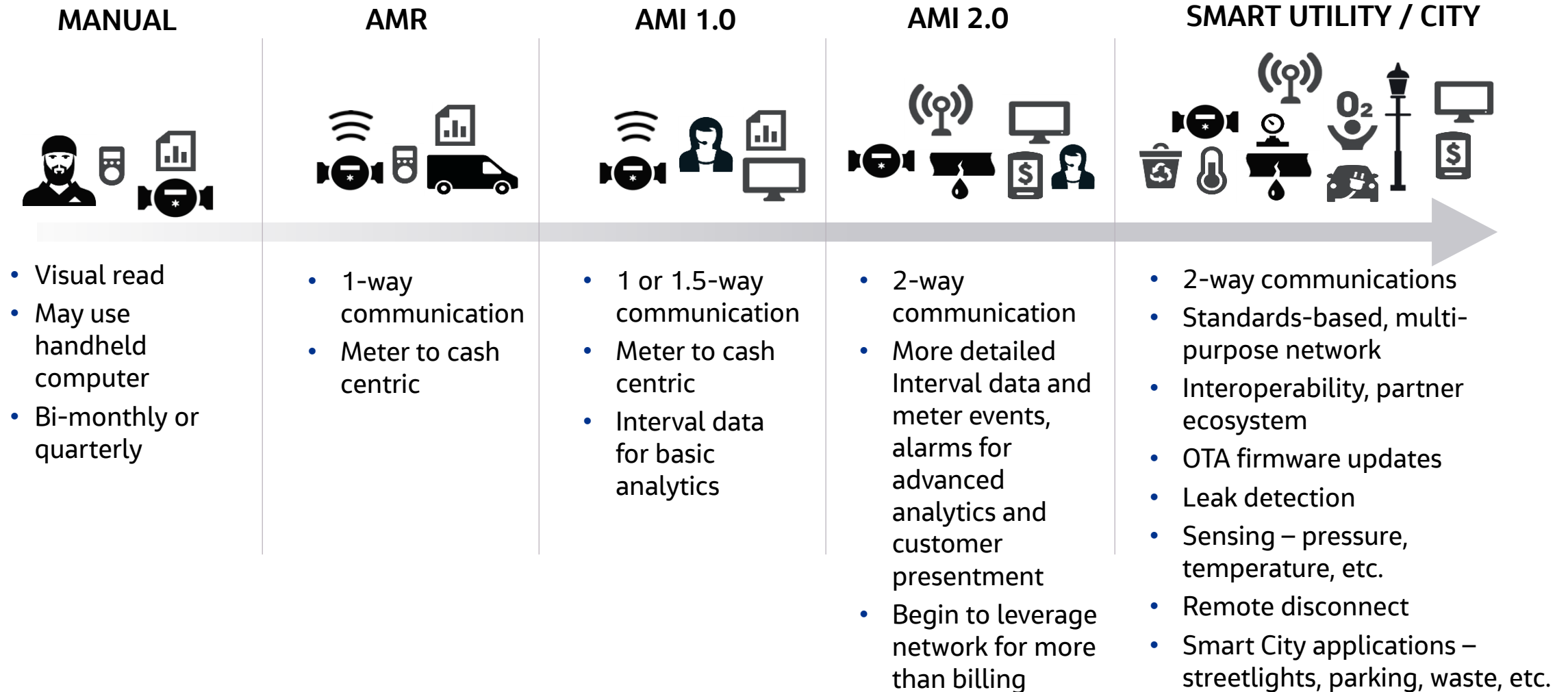
Columbia Water is a large water utility with 150,000 Customers

- Two Water Treatment Plants
 - Columbia Canal
 - Lake Murray
- 159.5 MGD Total Capacity
- 60 MGD Average Day (100 MGD Peak Day)
- Distribution System
 - 415K Customer Population
 - 2500+ miles of water mains
 - 14 pressure zones
 - 20 booster pump stations
 - 23 water storage tanks
 - Service area of 320 square miles



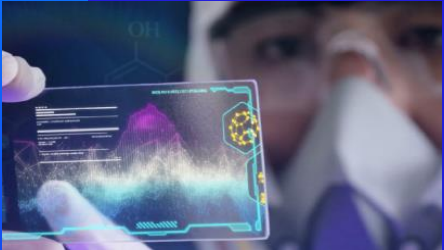
Smart Metering Methodology

Evolution of meter reading technology

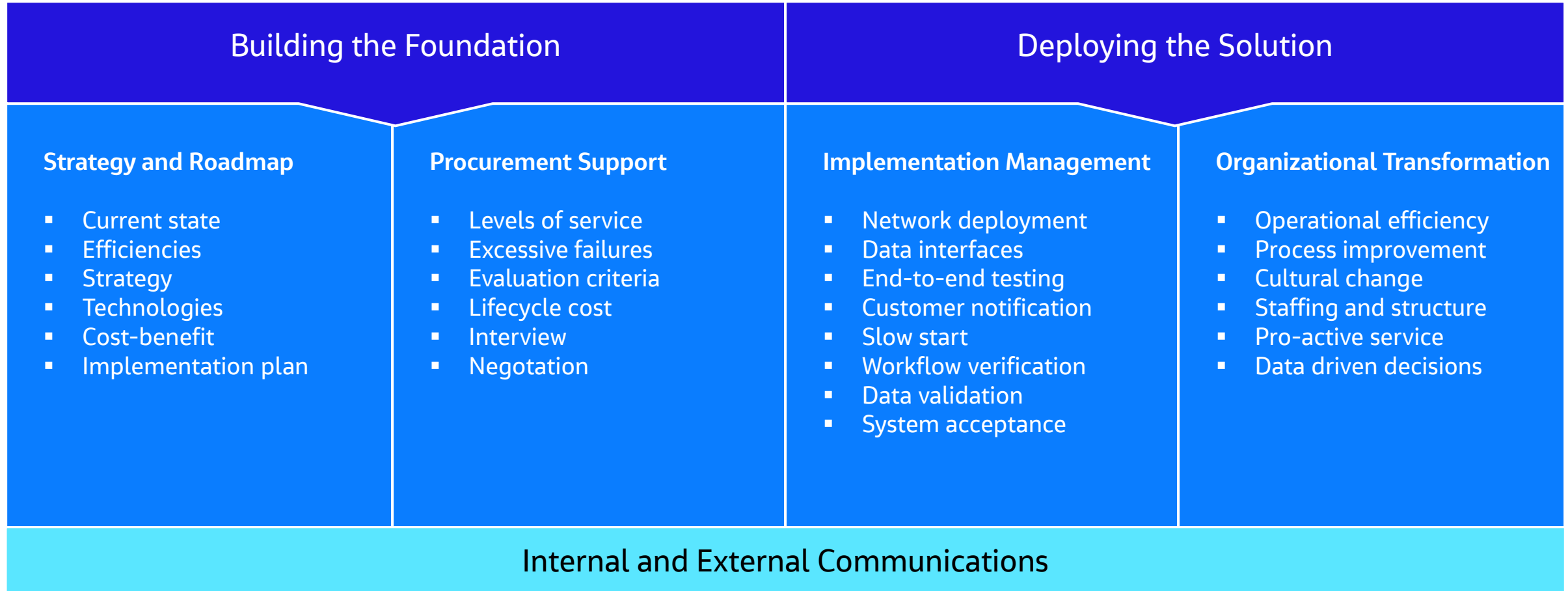


Your turn...

Poll Question

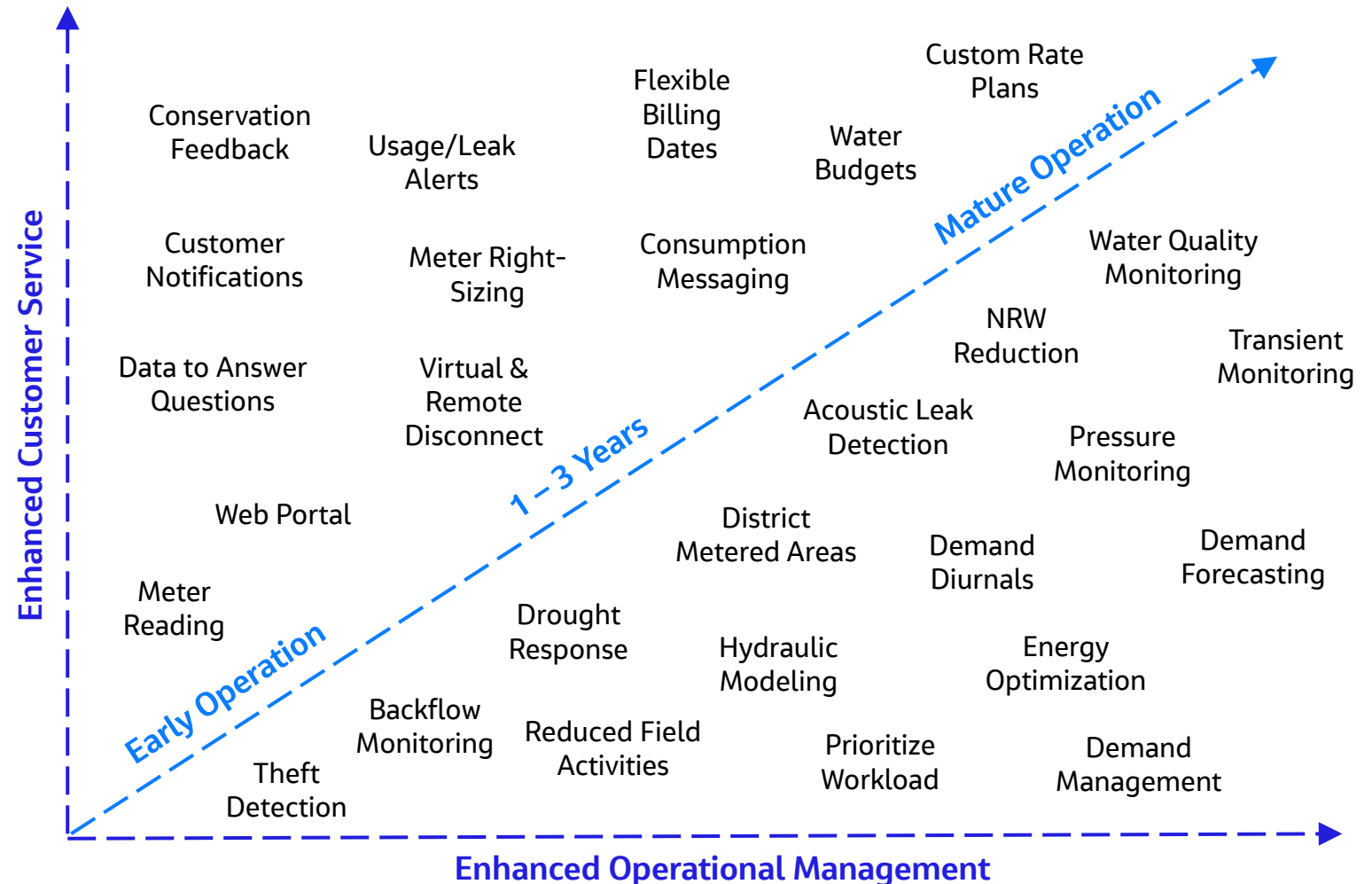


A foundational methodology helps to support well informed decisions



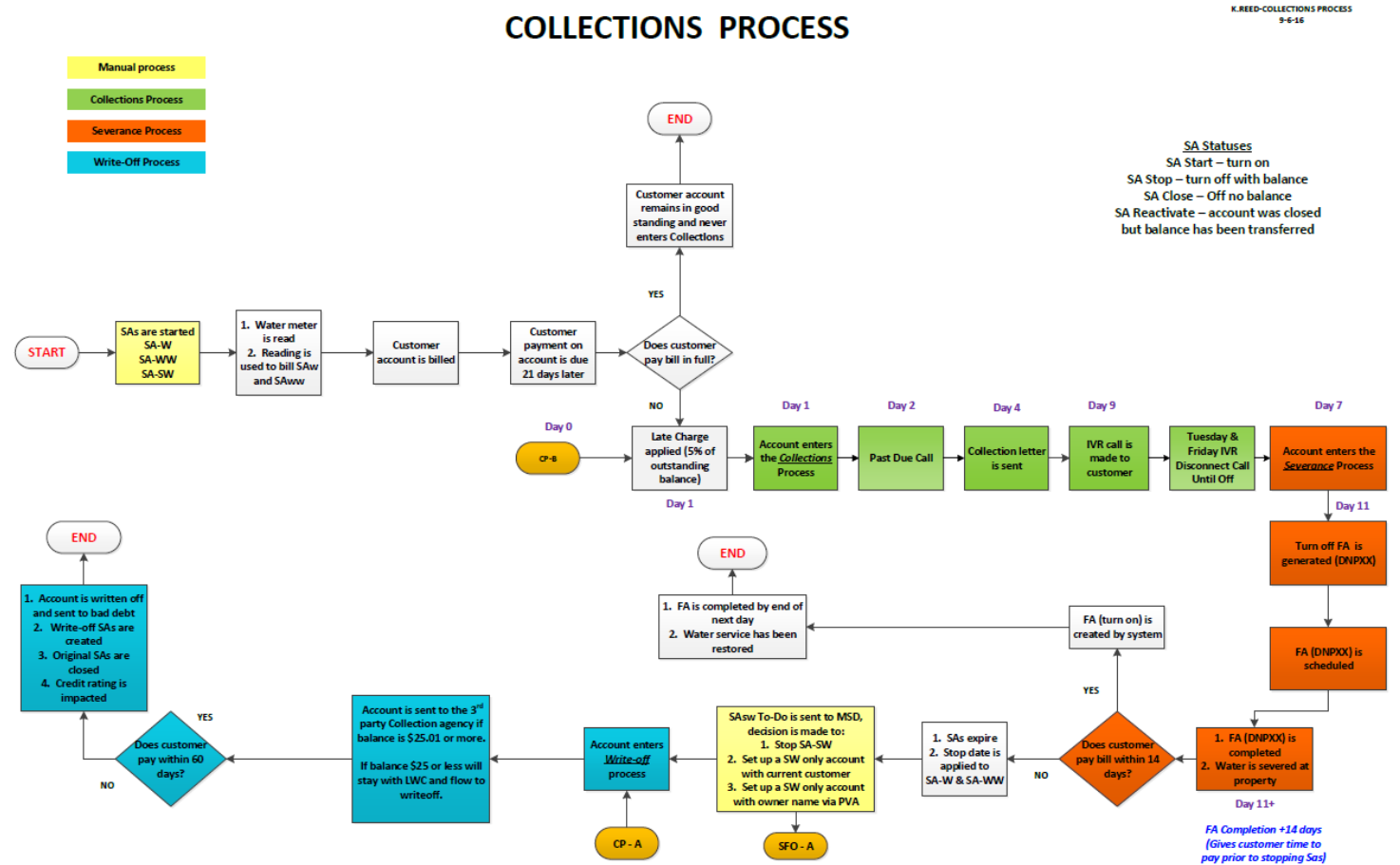
Successful AMI projects begin with well defined use-cases

- Functional requirements should be informed by the use cases
- Target benefits have a time component to them; short, medium, long-term
- Begin with the end in mind to clearly define target benefits
- Encourage internal and external awareness of use-cases and benefits



Virtual technologies enable projects to continue during COVID-19

- SharePoint for document management and co-authoring
- MS Teams for collaboration and video calls with client and stakeholders
- Use of MURAL to support visual collaboration and process mapping
- We continue to deliver all phases of AMI during COVID-19!



Success of the Columbia project

Project & Solution Overview

Project History:

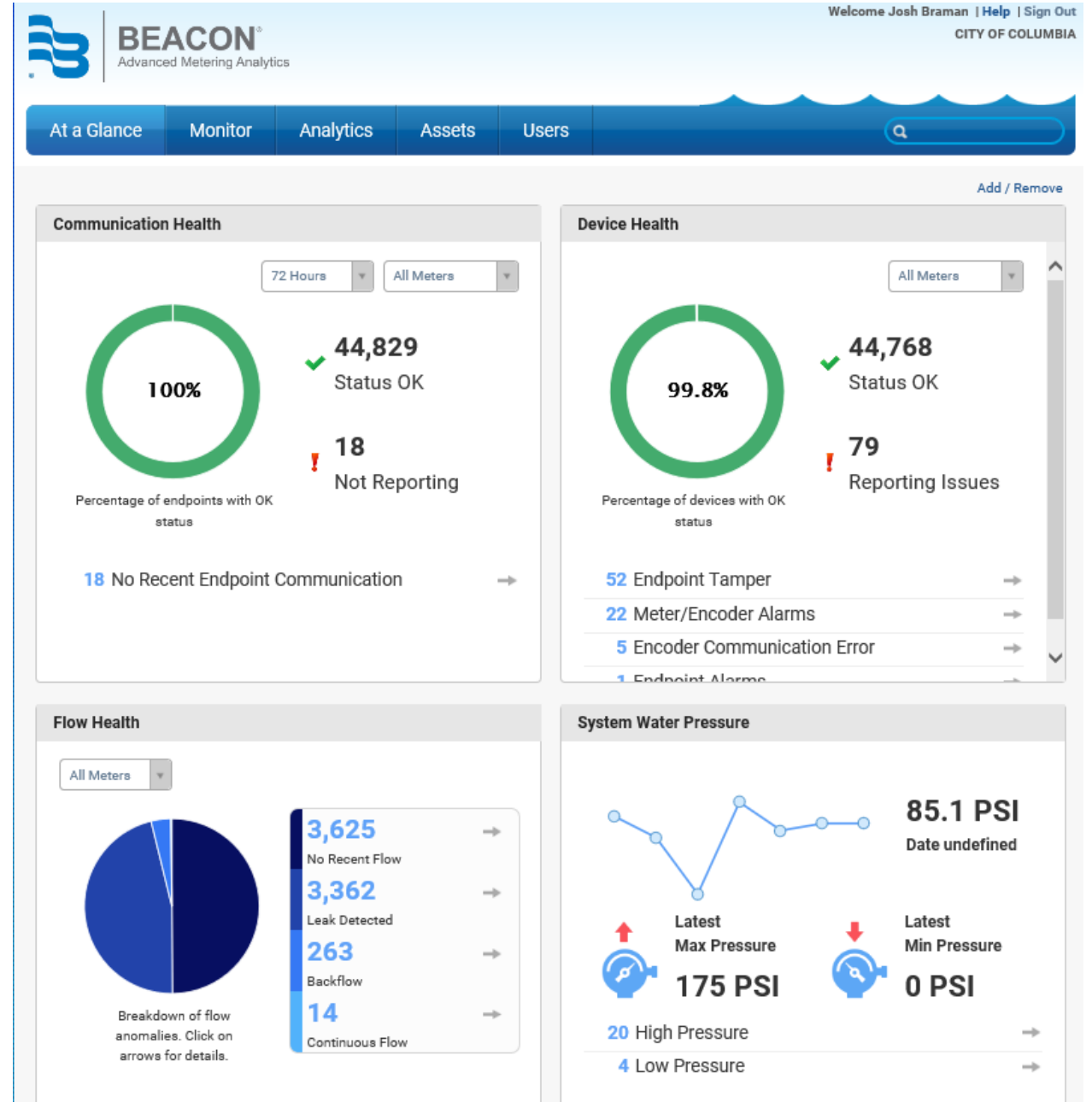
- Large scale meter replacement funding ends (Early 2000s)
- AMR/AMI Pilot Project (2012)
 - 600 AMR Meters
 - 200 AMI Meters
- AMI Consultant RFQ (2016)
- AMI Business Case Evaluation (2017)
- AMI RFP Solicitation and Vendor Selection (2018)
- 2019AMI Deployment (June 2019)

Project Drivers:

- Accurate meter reads
- Eliminate estimated bills
- Provide water usage data to customers
- Notify customers of high use prior to receiving a bill
- Smart Cities Applications
- Strong Business Case

Successes to Date

- Business Case
- Procurement
- NaaS and Performance to Date
- Installation Pace



Success Story | Customer leak detected by AMI

“This new meter and the data that it now provides us not only allowed us to provide the customer with accurate information but also allowed the customer the opportunity to resolve an issue that he had been unable to resolve for the past few months. ”

CSR Testimonial after identifying customer leak

- Customer called in regarding his last three billing statements that were extremely higher than normal.
- The CSR observed that his consumption increased the exact same time every other day.
- The CSR asked the customer did he have a sprinkler system and was that system set on a timer.
- Customer confirmed that he did. I explained to the customer that between the hours of 10am and 11am every other day during that time frame the meter is registering higher consumption than consumption through any other time in the day.
- This was great news to the customer, being that he and his family are most likely not home during that time of the day.

Lessons Learned

1. Conditions in the field were not what we expected

- Project originally expected to install 8,000 backflows out of 135,000 accounts (6%)
As of 3/2/2020, 5,674 backflow installations out of 22,486 completed installations (25%)
- Project originally expected 30,000 box changeouts out of 135,000 accounts (22%)
As of 3/2/2020, 8,550 box changeouts out of 22,486 installations (38%)

2. Initially the data told us we had compound meters, when in fact almost all are Fire Service Assembly



Modifying Warehouse Operations

Pre-COVID-19, installers would gather each morning/evening to load & unload inventory

- Too much time spent talking

Current COVID-19, installers no longer enter the warehouse; reserved for implementation management and inventory support staffing

- Improvements in efficiency – less 'water cooler talk'
- More productive hours in the field
- Lower risk of close personal contact

More Availability of Installers

Pre-COVID-19, the City was struggling to find and retain enough installers to keep pace with the project.

- Tough working conditions (high heat, rain)
- Difficult Installations (box replacements, existing tree roots)

Current COVID-19, more experienced installers from primarily indoor meter projects that have 'paused' are available to the City for temporary help.

Impact from Customers during COVID-19

- Customers who requested not to be upgraded are currently placed on temporary hold
- Existing customers who requested to 'opt-out' were previously placed on hold – letters to those customers regarding the upgrade are currently on hold
- Not 'pushing' customers with a forced upgrade currently, but plan is for 100% compliance by project end

Why AMI Now?

Direct benefits to utilities and their communities NOW

- AMI automates many field activities and reduces exposure for staff
 - Meter reading
 - High/low exceptions (re-reads)
 - Move in/out (final reads)
- Replace old (slow) meters
 - Increased revenue without rate increases
 - Meter right sizing
- Contracting installation provides for opportunity to employ local labor
 - Meter survey crew
 - Dig out crew
 - Installation crews
 - Plumbing/concrete crews

Questions & Answers



Challenging today.
Reinventing tomorrow.



Thank You

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